REMARKS

The Office Action mailed August 28, 2006, has been received and reviewed. Claims 1 through 41 are currently pending in the application. Claims 1 through 41 stand rejected. Applicants have amended claims 3, 13, 18, 27, 30, 32, 38 and 40, and respectfully request reconsideration of the application as amended herein.

Claim Objections

Claims 3, 13, 18, 27, 32, 38 and 40 are objected to under 37 CFR 1.75(c) as being improper, the phrase "and," should be "---,and ---", and the phrase "39. The base" in line 15 of page 26 should be "--- 38. The base---".

Applicants have amended claims 3, 13, 18, 27, 32, 38 and 40 as suggested and respectfully request the objections be withdrawn.

35 U.S.C. § 102 Anticipation Rejections

Anticipation Rejection Based on U.S. Patent Publication No. 2003/0050086 to Lee et al.

Claims 1, 2, 16 and 17 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Lee et al. (U.S. Patent Publication No. 2003/0050086). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicants submit that the Lee reference does not and cannot anticipate under 35 U.S.C. § 102 the presently claimed invention of independent claim 1, and claim 2 depending therefrom, and independent claim 16, and claim 17 depending therefrom, because the Lee reference does not describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims.

Applicants' invention as presently claimed in independent claim 1, recites:

> 1. A method for controlling power in a wireless communication system having multiple reverse-link communication channels, the method comprising:
>
> adjusting power levels of a first set of channels and a corresponding pilot channel; and
>
> adjusting traffic-to-pilot (T/P) ratios for one or more remaining channels independently of the power level of the pilot channel.

The Office Action confuses the concept of "multiple channels" of Applicants' invention with the concept of "multiple data rates" of the Lee reference. Furthermore, in the Lee reference, the different traffic-to-pilot (T/P) ratios apply to the varying "data rates" and not different groups of "traffic channels."

The Office Action alleges:

> Regarding claim 1, Lee discloses ***a method for controlling power in a wireless communication system having multiple reverse-link communication channels*** (see for example, Figures 1-6, paragraph [006], lines 1-5, [007], lines 1-3, [008], lines 1-6, [137], lines 1-7, wireless communication system multi-channel reverse link channels power control) .... (Office Action, pp. 2-3; emphasis added.)

A precise reading of the disclosure of the Lee reference at the specific citations discloses:

> Also, in a reverse link, a base station performs a coherent demodulation in order to improve the performance. The mobile station transmits a pilot channel along with a plurality of traffic channels so that the base station performs the coherent demodulation of the traffic channels. (Lee, [0006]).
>
> A traffic-to-pilot power ratio is determined in accordance with a coding rate, a desired signal-to-interference ratio (SIR), a transmission rate, etc. (Lee, [0007]).
>
> FIG. 1 is a block diagram explaining a conventional process of generating a multi-channel transmission signal. (Lee, [0008]).
>
> First, the channel for the reverse packet transmission is called a reverse packet data channel (R-PDCH). The R-PDCH is composed of two kinds of sub-channels, i.e., a reverse new packet data channel (R-NPDCH) used for transmission of a new packet and a reverse retransmission packet data channel (R-RPDCH) for transmission of a re-transmitted packet. (Lee, [0137]).

The Office Action continues to allege:

> ... ***the method comprising: adjusting power levels of a first set of channels and a corresponding pilot channel*** (see for example, paragraph [051], lines 3-11, [069], lines 1-4, [076], lines 1-4, [088], lines 1-8, [096], lines 1-8, [118], lines 1-7, [148], lines 9-19,

[149], lines 1-16, [162], lines 1-10, communication channels power level adjustments and the pilot channel) .... (Office Action, p. 3; emphasis added.)

While the specific alleged citations disclose adjustments to the power level of ***a pilot channel***, the citations of the Lee reference do not disclose "***adjusting power levels of a first set of channels***" as claimed by Applicants and therefore **cannot** anticipate under 35 U.S.C. § 102 Applicants' invention as claimed. Specifically, a precise reading of the disclosure of the Lee reference at the specific citations discloses:

> a method of adjusting a signal power in a variable data rate mode in a mobile communication system, comprises steps of ***allocating a reference pilot signal level to each of a plurality of data rates*** supported by the system, ***adjusting the reference pilot signal level for a changed data rate*** based on an external control information and adjusting a power control threshold for secondly ***adjusting the reference pilot signal level*** corresponding to the reference pilot signal level. (Lee, [0051]).
>
> Accordingly, it is necessary to ***change the reference pilot power level*** during the operation process of the variable data rate, and the ***reference pilot power level is adjusted*** through three different methods as follows. (Lee, [0069]).
>
> Based on the ***reference pilot power level*** determined as above, the ***power ratios of the pilot signal to the traffic signal are determined for the data rates*** in the respective groups. (Lee, [0076]).
>
> However, the mobile station that could not receive the approval message ***maintains the reference pilot power level*** of the present group (step S15). Accordingly, the mobile station ***uses the value of the reference pilot power level*** defined in its belonging group, transmits the present frame by determining the traffic power level corresponding to the changed or maintained data rate, and then prepares the transmission of the next frame (step S20). (Lee, [0088]).
>
> However, the mobile station that could not receive the approval message ***maintains the reference pilot power level*** of the present group (step S15). Accordingly, the mobile station ***uses the value of the reference pilot power level*** defined in its belonging group, transmits the present frame by determining the traffic power level corresponding to the changed or maintained data rate, and then prepares the transmission of the next frame (step S20). (Lee, [0096]).
>
> At this time, the power of the traffic signal in the mobile station should be determined according to the adjusted data rate, and ***the power level of the reference pilot signal is maintained*** to the previous value. Also, the data rate transmitted at the time point 2 should be also maintained at frame

time points 3, 4, and 5. That is, the data rate transmitted at the time point is maintained for 4 frames. (Lee, [118]).

According to a command for decreasing the data rate, the mobile station calculates the effective data rate $R_{eff}(i)$ at the i-th frame time. In the present invention, it is exemplified that the calculated $R_{eff}(i)$ becomes smaller than the effective data rate at the previous frame time by ½ (step S36). Then, the ***value of the reference pilot power level*** $PL[R_{eff}(i)]$ corresponding to the $R_{eff}(i)$ calculated as above is referred (step S37) Next, the mobile station checks whether the effective data rates for the predetermined N-frame delay time are always larger than or equal to the effective data rate at the (i-N)-th frame time (step S38). (Lee, [0148]).

If the effective data rates for the predetermined N-frame delay time are always larger than or equal to the effective data rate at the (i−N)-th frame time, the mobile station sets the ***reference pilot power level*** at the i-th frame time to the $PL[R_{eff}(i-N)]$ value (step S40). If not, the mobile station compares the reference pilot power level PL(i−1) used at the previous frame time with the reference pilot power level $PL[R_{eff}(i)]$ of the present effective data rate (step S39), and if the reference pilot power level PL(i−1) used at the previous frame time is greater than the reference pilot power level $PL[R_{eff}(i)]$, the mobile station instantly ***changes the reference pilot power level*** to be used in the present frame to the $PL[R_{eff}(i)]$ (step S41). That is, the mobile station increasingly ***adjusts the reference pilot signal level*** after a prescribed delay or decreasingly adjusts it without a delay in accordance with the changed data rate. (Lee, [0149]).

In the above-described adjustment process, the mobile station and the base station ***changes the pilot power level*** to be used according to a predetermined engagement and the threshold value to be used during the power control process. At this time, as described above, one among the method using the upper signaling message, the method using the indicator channel of a physical layer, and the ***method of changing the reference pilot power level*** and the power control threshold value by the mobile station and the base station, respectively. (Lee, [0162]).

The Office Action continues to allege:

… ***and adjusting traffic-to-pilot (T/P) ratios for one or more remaining channels independently of the power level of the pilot channel*** (see for example, paragraph [007], lines 1-3, [013], lines 1-4, [067], lines 1-5, [018], lines 1-2, [029], lines 1-6, [076], lines 1-4, [083], lines 1-6, [086], lines 1-6, [091], lines 1-5, [094], lines 1-5, [152], lines 1-7, the traffic to pilot ratio adjustment of some channels without the pilot channel power level). (Office Action, pp. 2-3; emphasis added.)

A precise reading of the disclosure of the Lee reference at the specific citations discloses:

A ***traffic-to-pilot power ratio is determined*** in accordance with a coding rate, a desired signal-to-interference ratio (SIR), a transmission rate, etc. (Lee, [0007]).

The transmission power control of the traffic channels is performed in a manner that the transmission ***power ratio of the traffic channel to the pilot channel is maintained constantly***. (Lee, [0013]).

In the variable data rate transmission mode, ***it is necessary for the mobile station to change the reference pilot power level for the transmission power control of other signals (i.e., traffic signals for transmitting the voice, image, and dedicated control information)***. As described above, this is because the mobile station operating in the variable data rate mode cannot use one fixed reference pilot power level like the existing 1x system since the number of data rates in the hypothesis set is 8. (Lee, [0067]).

Also, the ***power ratio of the traffic signal to the pilot signal is differently defined*** for the respective data rate. (Lee, [0018]).

It is assumed that the hypothesis set to be used is put as {9.6 kbps, 19.2 kbps, 38.4 kbps} through the negotiation stage between the mobile station and the base station. In this case, the optimum ***power ratios of the pilot signal to the traffic signal are determined*** as follows for the respective data rates. (Lee, [0029]).

Based on the reference pilot power level determined as above, the ***power ratios of the pilot signal to the traffic signal are determined*** for the data rates in the respective groups. (Lee, [0076]).

In case of heightening the present data rate, the mobile station changes the traffic signal power, but does not change the reference pilot power level. However, in case of maintaining the present data rate, ***the mobile station does not change the traffic signal power and the reference pilot power level.*** (Lee, [0083]).

The mobile station that received the approval message changes the group to which it belongs to the group B. Then, the mobile station uses the reference pilot signal power $P_{REF,B}$ defined in the group B and the ***power ratio of the pilot signal to the traffic signal*** for the respective data rate (steps S13 and S14). (Lee, [0086]).

The mobile station, according to the command indicated by the RRC bit (step S12), lowers the present data rate (step S21). In case of decreasing the present data rate, ***the mobile station changes the traffic signal power, but does not change the reference pilot power level.*** (Lee, [0091]).

The mobile station that received the approval message changes the group to which it belongs to the group B. Then, the mobile station ***uses*** the reference pilot signal power $P_{REF,B}$ defined in the group B and ***the power ratio of the pilot signal to the traffic signal*** for the respective data rate (steps S13 and S14). (Lee, [0094]).

Here, by using the energy reduction factor, the traffic to pilot power ratio of R-RPDCH is reduced by a constant amount from the ***traffic to pilot power ratio***

> ***defined for the corresponding data rate*** on R-NPDCH so that the receiving power level of the retransmitted data on R-RPDCH is reduced for a constant rate from the initially transmitted data on R-NPDCH. (Lee, [0152]).

While the Lee reference discloses the concept of a "traffic to pilot power ratio" the use of such a ratio is disclosed in the Lee reference is limited to "defined", "determined", "uses" and "maintained" which clearly does not disclose Applicants' claim element of "adjusting traffic-to-pilot (T/P) ratios for one or more remaining channels independently of the power level of the pilot channel."

Therefore, since the Lee reference does not disclose "each and every element as set forth in the claim" and the identical invention is not "shown in as complete detail as is contained in the claim", the Lee reference cannot anticipate under 35 U.S.C. § 102 Applicants' invention as presently claimed. Accordingly, Applicants respectfully request the rejection of claims 1 and claim 2 depending therefrom be withdrawn.

Applicants' invention as presently claimed in independent claim 16, recites:

> 16. A system for controlling power in a wireless communication system having multiple reverse-link communication channels, comprising:
> a base station; and
> a mobile station coupled to the base station via a wireless communication link;
> wherein the base station is configured to receive data from the mobile station on a plurality of reverse-link channels on the wireless communication link; and
> wherein the base station is ***configured to adjust a power level for a first set of reverse-link channels and a power level for a pilot channel, and to adjust a traffic-to-power (T/P) ratio for each of one or more additional reverse-link channels.*** (Emphasis added.)

Applicants herein sustain the above-proffered arguments regarding the lack of disclosure in the Lee reference of Applicants' claim elements of a base station "***configured to adjust a power level for a first set of reverse-link channels and a power level for a pilot channel, and to adjust a traffic-to-power (T/P) ratio for each of one or more additional reverse-link channels***". Therefore, since the Lee reference does not disclose Applicants' invention as claimed, the Lee reference **cannot** anticipate under 35 U.S.C. § 102 Applicants' independent claim 16 and claim 17 depending therefrom. Accordingly, Applicants respectfully request the rejections be withdrawn.

Anticipation Rejection Based on U.S. Patent Publication No. 2003/0050084 to Damnjanovic et al.

Claims 30 through 41 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Damnjanovic et al. (U.S. Patent Publication No. 2003/0050084). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicants submit that the Damnjanovic reference does not and cannot anticipate under 35 U.S.C. § 102 the presently claimed invention of independent claim 30, and claims 31-41 depending therefrom, because the Damnjanovic reference does not describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims.

Applicants' invention as presently claimed in independent claim 30, recites:

> 30. A base station operable to communicate with a mobile station via a wireless communication channel, wherein the base station comprises:
> a processing subsystem; and
> a transceiver subsystem coupled to the processing subsystem;
> wherein the transceiver subsystem is configured to receive signals on a first set of reverse-link channels, a pilot channel and one or more additional reverse-link channels; and
> wherein ***the base station is configured to adjust power levels for the first set of reverse-link channels and a power level for the pilot channel, and to separately adjust a traffic-to-power (T/P) ratio for each of the one or more additional reverse-link channels.*** (Emphasis added.)

The Office Action alleges:

> … the base station is configured to adjust power levels for the first set of reverse-link channels and a power level for the pilot channel (see for example, Figures 1 and 3, paragraph [003], lines 1-14, [040], lines 1-18, [052], lines 1-14, [055], lines 1-21, [072], lines 1-17, [079], lines 1-15, [097], lines 1-5, the base station adjust power level for the reverse-link and pilot channel), and to adjust a traffic-to-power (T/P) ratios for each of the one or more additional reverse-link channels (see for example, Figures 1 and 3, paragraph

[003], lines 1-14, [040], lines 1-18, [052], lines 1-14, [055], lines 1-21, [072], lines 1-17, [079], lines 1-15, [097], lines 1-5). (Office Action, pp. 6-7).

A precise reading of the disclosure of the Damnjanovic reference discloses:

> In 1xEV systems, the gain of the reverse traffic channel is fixed relative to the reverse pilot channel (R-PICH). The base station 12 controls the transmit power level of the reverse pilot channel. After determining the appropriate transmit power level on the pilot channel based on open loop power measurements and the power control bits received from the base station 12, the mobile station 100 computes the transmit power level for the traffic channel based on a fixed power offset stored in memory. The power offset between the reverse link traffic channel and the reverse link pilot channel does not change. ***Thus, the base station 12 effectively power controls the transmit power of the mobile station 100 on both the reverse pilot channel and the reverse traffic channel using a single PCB.*** (Damnjanovic, [052], lines 1-14).
>
> In the third embodiment of the present invention, the serving ***base station 12 controls the reverse pilot channel transmit power and the reverse rate control channel power, which has a fixed offset relative to the reverse pilot channel,*** as long as the T/P ratio is above $(T/P)_{MIN}$. (Damnjanovic, [097], lines 1-5).

While the Damnjanovic reference discloses power control by the base station of the pilot and a [singular] reverse traffic channel, the Damnjanovic reference discloses control of "the transmit power of the mobile station 100 on both the reverse pilot channel and the reverse traffic channel using a single PCB" which clearly does not appear to disclose Applicants' claim element of "the base station is configured to *adjust power levels for the first set of reverse-link channels and a power level for the pilot channel, and to* ***separately adjust*** *a traffic-to-power (T/P) ratio for each of the one or more additional reverse-link channels*" as claimed by Applicants in amended independent claim 30.

Therefore, since the Damnjanovic reference does not disclose "each and every element as set forth in the claim" and the identical invention is not "shown in as complete detail as is contained in the claim", the Damnjanovic reference cannot anticipate under 35 U.S.C. § 102 Applicants' invention as presently claimed. Accordingly, Applicants respectfully request the

rejection of amended independent claim 30 and claims 31-41 depending therefrom be withdrawn.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent Publication No. 2003/0050086 to Lee et al. in view of U.S. Patent No. 6,571,104 to Nanda et al.

Claims 3 through 15 and 18 through 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee et al. (U.S. Patent Publication No. 2003/0050086) in view of Nanda et al. (U.S. Patent No. 6,571,104). Applicants respectfully traverse this rejection, as hereinafter set forth.

The nonobviousness of independent claim 1 precludes a rejection of claims 3-15 which depends therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 3-15 which depend from allowable independent claim 1.

The nonobviousness of independent claim 16 precludes a rejection of claims 18-29 which depends therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 18-29 which depend from allowable independent claim 16.

CONCLUSION

Claims 1-41 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,

Dated: November 22, 2006

By: /Ramin Mobarhan/
Ramin Mobarhan, Reg. No. 50,182
(858) 658 2447

QUALCOMM Incorporated
5775 Morehouse Drive
San Diego, California 92121
Telephone: (858) 658-5102
Facsimile: (858) 658-2502